Claims

[c1] WHAT IS CLAIMED IS:

1. A device for exhaust air processing of clean rooms, the device comprising:
at least one fresh air supply (4) and at least one exhaust air device (9) connected to a work room (3);
at least one processing device (2) arranged in the work room;
at least one supply line (5, 5') and at least one exhaust air line (10) connected to the at least one processing device (2);
at least one first filter (11) arranged in the at least one exhaust air line (10) of the at least one processing device (2), wherein the at least one exhaust air line (10) is connected at least to one of the at least one supply line (5, 5') of the at least one processing device (2) and at least one fresh air supply line of the work room (3).

[c2] 2.The device according to claim 1, wherein the at least one exhaust air line (10) of the process device (2) opens into an exhaust air line (6) of the work room (3).

[c3] 3.The device according to claim 1, wherein the at least one first filter (11) is an ion exchanger.

[c4] 4.The device according to claim 1, wherein the at least one work room (3) is a storage room and wherein the exhaust air removed from the storage room is container breathing air or leakage air of a chemical container.

[c5] 5.The device according to claim 1, comprising at least one sensor (26) arranged in the at least one exhaust air line (10) of the at least one processing device (2) for risk detection.

[c6] 6.The device according to claim 5, wherein the at least one sensor (26) is arranged downstream of the at least one first filter (11) in the flow direction of the exhaust air flowing in the at least one exhaust line (10) of the at least one processing device (2).

[c7] 7.The device according to claim 1, wherein the at least one filter (11) is configured to be regenerated.

[c8] 8.The device according to claim 1, further comprising at least one second filter (12) correlated with the at least one first filter (11), wherein the at least one second filter (12) is connected parallel, connected in series, or connected in series and parallel to the at least one first filter (11).

[c9] 9. The device according to claim 8, wherein the first and second filters (11, 12) are switchable to be connected to a regeneration circuit and are configured to be regenerated.

[c10] 10.The device according to claim 9, comprising at least one storage tank (14) for a regeneration medium positioned in the regeneration circuit.

[c11] 11. The device according to claim 9, wherein the first and second filters (11,12) are parallel connected and configured to be alternatingly to the regeneration circuit.

[c12] 12.The device according to claim 9, wherein the regeneration circuit contains a regeneration medium, wherein the regeneration medium is an acid or a base.

[c13] 13.The device according to claim 8, wherein the at least one second filter (12) is configured identically to the at least one first filter (11).

[c14] 14.The device according to claim 13, wherein the acid is hydrochloric acid or sulfuric acid and wherein the base is sodium hydroxide.

[c15] 15.The device according to claim 6, wherein the at least one second filter (12) is an ion exchanger.

[c16] 16.A method for exhaust air processing in a device comprising at least one fresh air supply (4) and at least one exhaust air device (9) connected to a work room (3), at least one processing device (2) arranged in the work room, at least one supply line (5, 5') and at least one exhaust air line (10) connected to the at least one processing device (2), at least one first filter (11) arranged in the at least one exhaust air line (10) of the at least one processing device (2), wherein the at least one exhaust air line (10) is connected at least to one of the at least one supply line (5, 5') of at least one processing device (2) and the at least one fresh air supply line of the work room (3), wherein the method comprises the

steps of:

supplying supply air as a supply air flow to at least one of a work room and at least one processing device;

cleaning a pollutant-laden exhaust air stream exiting the at least one processing device to remove high-risk pollutants; and

returning the exhaust air stream after cleaning into the supply air flow.

[c17] 17.The method according to claim 16, further comprising the step of regenerating a filter medium of the at least one first filter (11,12) during cleaning of the pollutant-laden exhaust air.

[c18] 18.The method according to claim 17, wherein during the step of regenerating the exhaust air of the processing device (2) is guided through at least one second filter (12).

[c19] 19.The method according to claim 18, wherein one of the first and second filters (11, 12) is regenerated while another of the first and second filters is used for cleaning the exhaust air of the at least one processing device (2).